REMARKS

The present application was filed on July 15, 2003 with claims 1-17. Claim 2 was canceled and claims 18-21 were added in a previous response. Claims 1 and 3-21 remain pending, and claims 1, 16 and 17 are the independent claims.

Claims 1, 3-5, 11 and 14-17 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 7,013,255 (hereinafter "Smith") in view of St. Hontas et al., "ATM Traffic Generator Card. An Integrated Solution," Proceedings of the Third IEEE Symposium on Computers and Communications (ISCC '98), 1998, pages 161-165 (hereinafter "St. Hontas").

Claims 6-10, 13 and 18-21 are rejected under 35 U.S.C. §103(a) as unpatentable over Smith and St. Hontas in view of Bae & Suda, "Survey of Traffic Control Schemes and Protocols in ATM Networks," Proceedings of the IEEE, Vol. 79 No. 2, Feb. 1991, pages 170-189 (hereinafter "Bae").

Claim 12 is indicated as containing allowable subject matter.

With respect to the present §103 rejection of independent claim 1, Applicants respectfully submit that the relied-upon combination of Smith and St. Hontas fails to teach or suggest every limitation of claim 1.

For example, in formulating the rejection of claim 1 on page 6 of the present Office Action, the Examiner argues that Smith at column 6, lines 30-45, teaches "generating the second type of traffic further comprises accumulating compensatory traffic over one or more of the time intervals for which the first type of traffic is generated, and generating the traffic burst based at least in part on the accumulated compensatory traffic (i.e. percentage of the total number of packets in a specified time interval"). The relied-upon portion of Smith states:

> In some applications, packets (such as those containing data) will have interarrival times characterized by a bimodal distribution; that is, some of the packets will have interarrival times that are distributed normally and other of the packets will have interarrival times that are distributed lognormally. In such applications, the numbers of packets in each category must be determined. This can be done by assigning a percentage or range of percentages to the portion of the packets having normally distributed interarrival times and/or lognormally distributed interarrival times. These percentages or ranges of percentages can then be multiplied by the total number of packets passing through or routed by the switch in a specified time interval to yield the number of packets in each category (i.e., having normally or lognormally distributed interarrival times).

Applicants respectfully submit that the relied-upon portion of Smith discloses a technique for determining the number of packets passing through or routed by the switch in a specified time interval which have normally distributed interarrival times and lognormally distributed interarrival times. Even if these packets could somehow be characterized as accumulated compensatory traffic, there is no teaching or suggestion directed to generating a traffic burst based at least in part on such accumulated compensatory traffic.

St. Hontas fails to remedy the deficiency of Smith with regard to the limitation of claim 1 at issue, and hence the proposed combination of Smith and St. Hontas fails to teach or suggest every limitation of claim 1.

Moreover, even if one could somehow combine Smith and St. Hontas so as to reach the limitations of claim 1, "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR International Co. v. Teleflex Inc.*, 127 SCt 1727, 1741, 82 USPQ2d 1385, 1396 (U.S. 2007) Rather, in cases such as these, "when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." *KSR*, 127 SCt at 1740, 82 USPQ2d at 1395 (citing *United States* v. *Adams*, 383 U.S. 39, 51-52, 148 USPQ 479, 484 (1966)).

More particularly, in formulating the present rejection of claim 1, the Examiner concedes that Smith fails to disclose the limitation wherein a determination as to whether or not a traffic burst is generated for a given time interval is based at least in part on an amount of the first type of traffic generated over one or more previous time intervals. Instead, the Examiner argues that this limitation is met by Section 4.1.1 of St. Hontas. Specifically, the Examiner relies primarily on the last sentence of the first paragraph of page 3 of St. Hontas, which states that "dependencies between a burst and the following silence, or autocorrelative (e.g., autoregressive) laws between the bursts from cycle to cycle are easily implementable."

However, Applicants believe that one skilled in the art would not have been motivated to modify Smith to incorporate the techniques disclosed in the relied-upon portion of St. Hontas in view of the explicit teachings of Smith directly away from such a modification.

In arguing that Smith does not teach away from the proposed combination, at page 3, last paragraph, of the present Office Action, the Examiner argues that column 1, lines 57-64, of "Smith expressly discloses that the autoregressive model has been known to be successful in certain packet-based environments, like ATM." Applicants respectfully note that Smith at column 1, line 57, to column 2, line 3, states as follows, with emphasis supplied:

> Other models have been considered in modeling ATM traffic using random number generators, including the Markov Modulated model, the Transform Expand Sample model, the Autoregressive model, the Fluid model, and the Self-similar model. Although these models have been found to have varying degrees of success for modeling Ethernet traffic (which, like ATM networks, uses a packet-based protocol), they have been largely unsuccessful in characterizing the bursty nature of ATM traffic.
>
> The failure of these models is in part due to the differences between ATM networks and other type [sic] of packet networks. For example, ATM is a connection-oriented protocol with a fixed length packet size. This contrasts with Ethernet which is a connectionless protocol with variable length packet size.

Applicants respectfully disagree with the Examiner's characterization of the relied-upon portion of Smith. Rather, Applicants respectfully submit that the relied-upon portion of Smith indicates that while the autoregressive model has been found to have varying degrees of success for modeling Ethernet traffic, the autoregessive model has been "largely unsuccessful" and a "failure" in characterizing the bursty nature of ATM traffic. Despite there being certain similarities between Ethernet networks and ATM networks, this failure of the autoregessive model with regard to ATM networks is in part to due to the differences between ATM networks and Ethernet networks. For example, although both Ethernet and ATM are packet-based protocols, Ethernet is a connectionless protocol with variable length packet size, while ATM is a connection-oriented protocol with a fixed length packet size.

As such, Applicants respectfully disagree with the Examiner's characterization of the relied-upon portion of Smith as disclosing that the autoregressive model has been known to be successful in certain packet-based environments like ATM. To the contrary, Smith itself teaches directly away

from the Examiner's proposal to modify Smith so as to implement the autoregessive model allegedly disclosed by St. Hontas.

On page 3, last paragraph, of the present Office Action, the Examiner argues that "although Smith discloses examples and preferred embodiments employed in order to simulate the bursty nature of ATM traffic, this disclosure does not constitute a teaching away from a broader disclosure or non-preferred embodiment of an autoregressive model."

Applicants respectfully submit that this is not a situation where "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed." *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004) Rather, one skilled in the art faced with the teachings of Smith explicitly indicating failure of the autoregressive model in the ATM context, would clearly not look to modify the Smith arrangements with an ATM traffic generator based on autoregressive techniques as described in St. Hontas.

It is believed that claim 1 is not obvious over the proposed combination of Smith and St. Hontas. Independent claims 16 and 17 include limitations similar to those of claim 1 and are hence believed allowable for reasons similar to those identified above with regard to claim 1.

Dependent claims 3-15 and 18-21 are believed allowable at least by virtue of their respective dependencies from the independent claims. These dependent claims are also believed to define separately-patentable subject matter over the cited art.

For example, dependent claim 6 specifies that the step of generating the second type of traffic further comprises the step of determining, for each of one or more time intervals, if an amount of the traffic of the first type generated during that interval is less than a comparison level, and if so, adding an amount of compensatory traffic to a burst container having a capacity given by a burst size.

In formulating the present rejection of dependent claim 6, the Examiner concedes that the combination of Smith and St. Hontas fails to disclose the above claim limitations. Instead, the Examiner relies upon Bae at page 177, left column, line 18, to page 178, right column, line 8. Applicants respectfully submit that the relied-upon portion of Bae merely discloses a conventional leaky-bucket bandwidth enforcement mechanism in which arriving cells must obtain a token from a

token pool in order to enter the network; if there is no token, a cell must in wait in the queue until a new token is generated. If the number of tokens in the token pool exceeds some predefined threshold value, the process of token generation stops.

The Examiner analogizes Bae's threshold level of tokens in the token pool to the recited comparison level and Bae's queue to the burst container having a capacity given by a burst size. Even assuming that these elements of Bae could in fact be considered analogous to those recited in claim 6, the relied-upon portion of Bae fails to meet the limitations of claim 6.

Specifically, the Examiner argues that Bae teaches a technique wherein, if a number of cells arriving during an interval is less than the threshold value of tokens in the token pool, an amount of compensatory traffic is added to the queue. Applicants respectfully disagree and instead note that, in the technique disclosed by Bae, if the number of cells arriving during an interval is less than the threshold value of tokens in the token pool, all of the arriving cells will be able to immediately obtain a token from the token pool and hence will be able to immediately enter the network without waiting in the queue until a new token is generated. In other words, if a number of cells arriving during an interval is less than the threshold value of tokens in the token pool, no traffic is added to the queue.

In the present Office Action at page 4, first paragraph, the Examiner argues that "Bae discloses that if the threshold value is exceeded then the process of token generation stops, or implicitly if the threshold value is not reached then additional tokens are generated and thus traffic is added." (emphasis in original)

Applicants respectfully submit that the generation of additional tokens will not result in additional traffic being added to the queue. Rather, as noted above, arriving cells will be able to immediately obtain a token from the token pool and hence will be able to immediately enter the network without waiting in the queue.

Accordingly, Bae fails to supplement the teachings of Smith and St. Hontas so as to meet the limitations of claim 6. Dependent claims 18 and 20 include limitations similar to those recited in claim 6 and are therefore believed to be similarly patentable.

In formulating the present rejection of dependent claim 13, the Examiner concedes that the combination of Smith and St. Hontas fails to disclose the claim limitation directed to generating a

plurality of traffic bursts in a manner which tends to compensate for temporary reductions in the amount of traffic of another type so as to substantially maintain a particular level of traffic flow.

Instead, the Examiner argues that these limitations are taught by Bae at page 175, left column, lines 30-58, and page 176, left column, lines 45-62, which the Examiner characterizes as disclosing that "traffic bursts are multiplexed to maintain constant levels." Applicants respectfully disagree with the Examiner's characterization of the relied-upon portions of Bae. Rather, Applicants respectfully submit that Bae at page 175, left column, lines 30-58, is directed to proposed definitions of burstiness. Page 176, left column, lines 45-62, is directed to investigations of statistical multiplexing of bursty sources, and more specifically how the cell loss probability and the average delay time varies as a function of various parameters, such as the number of sources, the peak bit rate, and the burstiness of the sources.

The relied-upon portions of Bae contain no teaching or suggestion directed to generating traffic bursts, much less doing so in a manner which tends to compensate for temporary reductions in the amount of traffic of another type so as to substantially maintain a particular level of traffic flow.

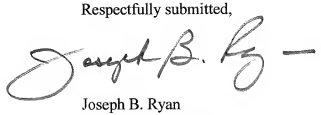
In the present Office Action at page 4, last paragraph, the "Examiner asserts that Bae expressly discloses allowing for a certain degree of burstiness to further enforce control of the traffic flow. Additionally, Bae discloses that the traffic flow is controlled through the distribution of tokens, which creates bursts that maintain an average input rate of the traffic. Clearly, it can be determined that in order to maintain an average input rate, that the bursts must correspond to the amount of traffic entering the network, which is inclusive of reductions or increases."

Applicants respectfully submit that the relied-upon portions of Bae do not teach generating traffic bursts, but rather merely indicate that it may be desirable to maintain some of the pre-existing burstiness. Bae fails to teach or suggest generating traffic bursts in a manner which tends to compensate for temporary reductions in the amount of traffic of another type so as to substantially maintain a particular level of traffic flow.

Accordingly, Bae fails to supplement the teachings of Smith and St. Hontas so as to meet the limitations of claim 13. Dependent claims 19 and 21 include limitations similar to those recited in claim 13 and are therefore believed to be similarly patentable.

In view of the above, Applicants believe that claims 1 and 3-21 are in condition for allowance.

Respectfully submitted,



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